

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 May 2005 (19.05.2005)

PCT

(10) International Publication Number
WO 2005/044354 A1

(51) International Patent Classification⁷: **A61M 15/08**,
B05B 11/00, B65D 83/14

(21) International Application Number:
PCT/GB2004/004626

(22) International Filing Date:
2 November 2004 (02.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0325629.4 3 November 2003 (03.11.2003) GB
0405477.1 11 March 2004 (11.03.2004) GB
0420539.9 17 September 2004 (17.09.2004) GB

(71) Applicant (for all designated States except US): **GLAXO GROUP LIMITED** [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex UB6 0NN (GB).

(72) Inventors; and

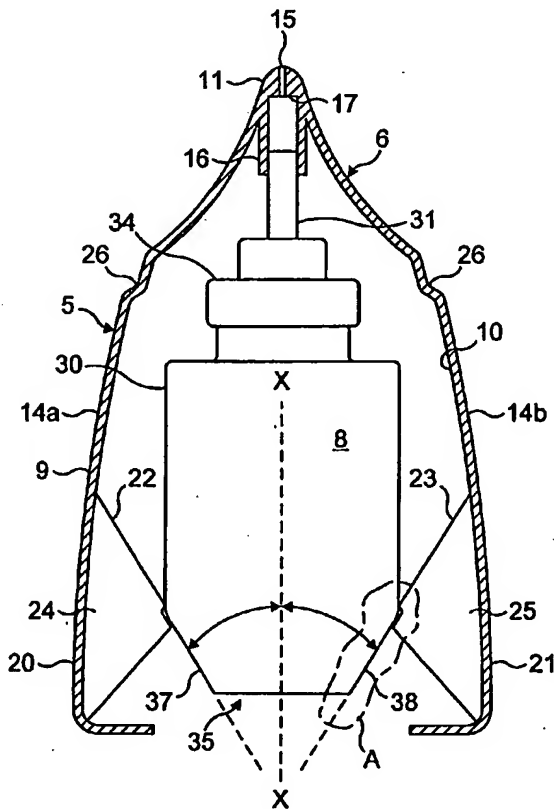
(75) Inventors/Applicants (for US only): **DAVIES, Michael**, Birsha [GB/GB]; GlaxoSmithKline, Park Road, Ware Hertfordshire SG12 0DP (GB). **HEDLEY, Mark**, Graham [GB/GB]; GlaxoSmithKline, Park Road, Ware Hertfordshire SG12 0DP (GB). **JONES, Margot, Jean** [AU/GB]; GlaxoSmithKline, Park Road, Ware Hertfordshire SG12 0DP (GB).

(74) Agent: **GIDDINGS, Peter, John**; GlaxoSmithKline, Corporate Intellectual Property (CN925.1), 980 Great West Road, Brentford, Middlesex TW8 9GS (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,

[Continued on next page]

(54) Title: A FLUID DISPENSING DEVICE



(57) Abstract: A fluid dispensing device (5, 105, 205, 305, 405, 505) for dispensing a fluid form medicament formulation having a viscosity of from 10 to 2000 mPa.s. is disclosed and comprises a housing (9, 109, 209, 309, 409, 509) and a fluid discharge device (8, 108, 208, 308, 408, 508) arranged to be actuated by one or more levers (20, 21; 120, 121; 170; 220, 221; 320, 321; 420, 421; 520) to cause actuation of a pump forming part of the fluid discharge device. A pre-load means (28; 27, 28; 39, 40; 41, 42, 44; 144, 47a, 47b; 150, 152, 153; 224, 227; 342; 424x, 446; 425a; 427, 428; 560, 561) is used to prevent actuation of the pump until a pre-determined force is applied to each lever of sufficient magnitude to guarantee the production of a well developed efficient spray from the fluid dispensing device.

WO 2005/044354 A1



PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.